

REMARKS

Applicants have carefully studied the outstanding Official Action. The present response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

The Application as examined included claims 26 and 29 - 38. Claims 2 - 3, 15, 27 - 28 and 40 were previously cancelled. Claims 1, 4 - 14, 16 - 25, 39 and 41 - 50 were previously withdrawn.

In the present response, pending claims 26 and 38 and withdrawn claims 1, 13 - 14, 25, 39 and 50 are amended. Pending claims 29 - 37 and withdrawn claims 4 - 12, 16 - 24 and 41 - 49 are unchanged.

Claims 26, 29 - 30 and 32 - 38 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Nathan et al (U.S. Patent No. 6,197,450, hereinafter Nathan '450) in view of Noda et al (U.S. Patent No. 5,268,243). Claim 31 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Nathan '450 in view of Noda and further in view of Rigal et al (U.S. Patent No. 4,346,153).

Claims 26 and 29 - 38 stand provisionally rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 1 - 13 of copending Application No. 11/374,469. Applicants note that Application No. 11/374,469 issued on November 17, 2009 as U.S. Patent No. 7,618,748. A terminal disclaimer is filed concurrently herewith.

Nathan '450 describes thin-film micro-electrochemical energy storage cells (MEESC) including two thin layer electrodes, an intermediate thin layer of a solid electrolyte and optionally, a fourth thin current collector layer; where the layers are deposited in sequence on a surface of a substrate.

Noda describes a galvanic cell in which at least one of the negative electrode, the positive electrode and the separator cell comprises a solid electrolyte prepared by doping an ionic compound to an organic polymer.

Rigal describes an electrode for a lead-acid storage cell, the electrode containing an active material, an active material support and at least one electric conductor which includes a core made of a metal whose electric conductivity is higher than that of lead. The core is coated with a protective layer made of a substance chosen from the group comprising titanium, tungsten, tantalum, niobium, zirconium and alloys thereof.

Applicants express appreciation to Examiner Steven Scully and SPE Dah-Wei Yuan for the courtesy of an interview which was granted to applicant's representative, Sanford T. Colb (Reg. No. 26,856). The interview was held at the USPTO on February 23, 2010. The substance of the interview is set forth in the Interview Summary.

At the interview, claim 26 and proposed amendments thereto were discussed vis-à-vis the prior art of Nathan and Noda. The Interview Summary states, in relevant part, "Discussed electrochemical deposition, where it is the position of the Examiner that this is a product-by-process limitation that does not further limit the product. The amendment to the claim overcomes the art on the record, however would require a further search and consideration due to the change in the scope of the claim."

As discussed at the interview, applicant has amended claim 26 to recite, inter alia, "a thin film cathodic layer electrochemically formed on at least one surface of said conductive substrate, said cathodic layer comprising at least one material selected from the group consisting of sulfides of cobalt, sulfides of tungsten and mixtures thereof." Withdrawn claims 1, 14 and 39 are similarly amended. Claim 38 is amended in light of the amendments to claim 26. Withdrawn claims 13, 25 and 50 are similarly amended.

The microbattery of the present invention, as recited in amended claim 26, includes, inter alia, a perforated conductive substrate including a plurality of cavities, and a thin film cathodic layer electrochemically formed on at least one surface of the conductive substrate,

where the cathodic layer includes at least one material selected from the group consisting of sulfides of cobalt, sulfides of tungsten and mixtures thereof and where the cathodic layer is deposited between the cavities and throughout the inner surfaces of the cavities.

As discussed at the interview, Applicants respectfully submit that neither Nathan '450 nor Noda, alone or in combination, shows or suggests a thin film cathodic layer electrochemically formed on at least one surface of a conductive substrate including a plurality of cavities, where the cathodic layer includes at least one material selected from the group consisting of sulfides of cobalt, sulfides of tungsten and mixtures thereof and where the cathodic layer is deposited between the cavities and throughout the inner surfaces of the cavities, as recited in amended claim 26.

Applicants submit that none of the cited prior art, alone or in combination, shows or suggests a microbattery, as recited in amended claim 26, including, inter alia, a thin film cathodic layer electrochemically formed on at least one surface of a conductive substrate including a plurality of cavities, where the cathodic layer includes at least one material selected from the group consisting of sulfides of cobalt, sulfides of tungsten and mixtures thereof and where the cathodic layer is deposited between the cavities and throughout the inner surfaces of the cavities, and that amended claim 26 is therefore patentable.

Claims 29 - 38 each depend directly or ultimately from claim 26 and therefore are allowable.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

Further, the Commissioner is hereby authorized to charge any additional fees or credit any overpayment in connection with this paper to Deposit Account No. 20-1430.

Appl. No. 10/531,529
Amtd. dated April 5, 2010
Reply to Office Action of January 15, 2010

PATENT

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,

/darin j gibby/
Darin J. Gibby
Reg. No. 38,464

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 303-571-4000
Fax: 415-576-0300
DJG/el
62636835 v1